C1 Concld wherein entire interface surfaces between the first diffusion prevention film and the capacitor insulating film and entire interface surfaces between the second diffusion prevention film and the capacitor insulating film are flat.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-32 are pending in the present application with Claim 1 having been amended by the present amendment.

In the outstanding Office Action, Claims 1 and 3-9 were rejected under 35 U.S.C. § 102(e) as anticipated by Alers et al., and Claim 2 was rejected under 35 U.S.C. § 103(a) as unpatentable over Alers et al. in view of Hayashi.

Again, Applicants note the outstanding Office Action indicates Claims 1-9 are pending in the present application, but Claims 1-32 are actually pending in the application.

Claims 1 and 3-9 stand rejected under 35 U.S.C. § 102(e) as anticipated by Alers et al. This rejection is respectfully traversed.

Claim 1 has been amended to recite that the entire interface surfaces between the first diffusion prevention film and the capacitor insulating film and entire interface surfaces between the second diffusion prevention film and the capacitor insulating film are flat. The claimed flat interface surfaces are advantageous because if the capacitor is curved, leakage will occur at the curved portions due to the concentration of the electric field, which results in the deterioration in reliability of the capacitor.

In a non-limiting example, Figure 2 shows the entire interface surfaces between the first diffusion prevention film 14 and the capacitor insulating film 15 being flat. The same is

true for the entire interface surfaces between the second diffusion prevention film and the capacitor insulating film.

The outstanding Office Action indicates the edge surfaces of Alers et al. are flat and thus Alers et al. reads on the claimed invention. However, as is clear from Figure 1 of Alers et al., the entire interface surfaces between the first diffusion prevention film 44 and the capacitor insulating film 46 are not flat. That is, the capacitor is curved in Alers et al., which results in leakage at the curved portions due to the concentration in electric field thereby deteriorating the reliability of the device. This clearly differs from Claim 1 of the present invention.

Accordingly, it is respectfully submitted independent Claim 1 and each of the claims depending therefrom are allowable.

Further, regarding the rejection of Claim 2 under 35 U.S.C. § 103(a) as unpatentable over Alers et al. in view of Hayashi et al., it is respectfully noted Claim 2 depends on Claim 1, which as discussed above is believed to be allowable. Further, Hayashi et al. also does not teach or suggest the claimed features. Accordingly, it is respectfully requested this rejection also be withdrawn.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER AND NEUSTADT, P.C.

Eckhard H. Kuesters
Registration No. 28,870
Attorney of Record
David A. Bilodeau
Registration No. 42,325

22850

Tel.: (703) 413-3000
Fax: (703) 413-2220
EHK:DAB/bwt
I:\ATTY\DAB\200889US-AM.DOC

Marked-Up Copy
Serial No: 09/734,658
Amendment Filed on: 5/15/03

IN THE CLAIMS

1. (Three Times Amended) A MIM capacitor comprising:

first and second electrodes formed from a metal material;

a capacitor insulating film;

a first diffusion film interposed between said capacitor insulating film and said first electrode to prevent diffusion of atoms constituting the metal material; and

a second diffusion prevention film interposed between said capacitor insulating film and said second electrode to prevent diffusion of atoms constituting the metal material;

wherein [each of said first and second diffusion prevention films has a flat surface directly adjacent to said capacitor insulating film] entire interface surfaces between the first diffusion prevention film and the capacitor insulating film and entire interface surfaces between the second diffusion prevention film and the capacitor insulating film are flat.